

1 1. A graphical user interface for specifying an operation to be performed on a user-  
2 defined field of a record representing a process in conjunction with posting an activity as  
3 performed with regard to the process, the activity having an activity type and  
4 the graphical user interface comprising:

5 a window for the activity type containing

6 a first field in which the user can identify the user-defined field to be  
7 operated on; and

8 one or more operation fields that, when the user has identified the user-  
9 defined field, the user may set to specify the operation.

1 2. The graphical user interface set forth in claim 1 wherein:

2 the identified user-defined field's values belong to one of a plurality of types; and

3 the operation fields in the entry are determined by the type of the identified field's  
4 values.

1 3. The graphical user interface set forth in claim 2 wherein:

2 the plurality of types include types whose values belong to ordered sets that are  
3 defined in the system in which the graphical user interface is used, types whose values  
4 specify times, and types whose values specify persons.

1 4. The graphical user interface set forth in claim 1 wherein:

2           the user may set the operation fields to specify that the identified field be set to a  
3   null value.

1   **5.** The graphical user interface set forth in claim 1 wherein:

2           the user may set the operation fields to specify a value and to specify that the  
3   value be assigned to the identified field.

1   **6.** The graphical user interface set forth in claim 1 wherein:

2           the user may set the operation fields to specify an operation by which a new value  
3   for the identified field may be computed from a current value which is the identified  
4   field's value.

1   **7.** The graphical user interface set forth in claim 6 wherein:

2           the identified field's value belongs to an ordered set of values; and  
3           the user may set the operation fields to specify an increment operation wherein  
4   the identified field's new value is a value that follows the identified field's current value  
5   in the ordered set of values.

1   **8.** The graphical user interface set forth in claim 1 wherein:

2           the identified field may have a null value when the activity is posted; and  
3           the user may set the operation fields to specify an action that is to be performed  
4   when the identified field has the null value and/or an action that is to be performed when  
5   the identified field does not have the null value.

1    **9.** The graphical user interface set forth in claim 1 wherein:

2            the user may set the operation fields to specify a reference field which is another  
3    field in the record and a reference field operation by which a new value for the identified  
4    field may be computed from a current value of the reference field.

1    **10.** The graphical user interface set forth in claim 9 wherein:

2            the identified field may have a null value when the activity is posted; and  
3            the user may set the operation fields to specify a first reference field and a first  
4    reference field operation that is to be performed when the identified field has the null  
5    value and/or a second reference field and a second reference field operation that is to be  
6    performed when the identified field does not have the null value.

1    **11.** The graphical user interface set forth in claim 9 wherein:

2            the reference field operation assigns the current value of the reference field to the  
3    identified field.

1    **12.** The graphical user interface set forth in claim 9 wherein:

2            the identified field and the reference field have time values; and  
3            the user may further set the operation fields to specify an amount of time by  
4    which the reference field's current value is increased or decreased to compute the new  
5    value for the identified field.

1    **13.** The graphical user interface set forth in claim 12 wherein:

the user may further set the operation fields to specify the amount of time in one of a plurality of ways.

**14.** The graphical user interface set forth in claim 13 wherein:

one of the plurality of ways is days; and  
when days have been specified, the user may further set the action fields to specify whether the days will be computed as business days or calendar days.

**15.** The graphical user interface set forth in claim 12 wherein:

one of the reference fields is a field whose value is always set to the current time.

**16.** The graphical user interface set forth in claim 1 wherein:

the identified field has a person value; and  
the user may set the operation fields to specify a role reference field from which a new person value for the identified field may be obtained, the role reference field referring to an ordered set of person values wherein one of the person values is a last-used person value and the role reference field obtaining the next person value following the last-used person value as the new person value for the identified field.

**17.** The graphical user interface set forth in claim 16 wherein:

the user may further set the operation fields to specify a person reference field that has a person value, the identified field being set from the value of the person reference field.

**18.** The graphical user interface set forth in claim 17 wherein:

another operation has been specified which assigns the person reference field a value from a role reference field; and operations which assign person fields values from roll reference fields are performed prior to other operations.

**19.** The graphical user interface set forth in claim 16 wherein:

the user may further set the operation fields to directly specify a person value, the identified field being set from the directly-specified person value.

**20.** A process control system comprising:

a server that has access to a database system and executes program code for the process control system;

a table of process records in the database system, a process record indicating a current condition of a process being controlled by the system and certain ones of the process records including one or more user-defined fields;

a table of activity type records in the database system that define activities to be performed with regard to the process, at least one of the activity type records specifying an operation to be done on a particular user-defined field; and

a portion of the program code which is executed in conjunction with posting an activity defined by at the least one activity type record in the system, the activity being posted as performed with regard to a process represented by a given process record and the operation specified in the at least one activity type being done during execution of the portion of the program code.

1   **21.** The process control system set forth in claim 20 further comprising:

2           a table of activity records in the database system, an activity being posted by  
3   making a record for the activity in the table of activity records.

1   **22.** The process control system set forth in claim 20 wherein:

2           the at least one activity type record defines an activity that the process control  
3   system automatically posts with regard to a process represented by a process record  
4   returned by a query on the table of process records.

1   **23.** The process control system set forth in claim 22 wherein:

2           the process control system automatically performs the query.

1   **24.** The process control system set forth in claim 20 wherein:

2           the at least one activity type record defines an activity that is posted by a user of  
3   the process control system.

1   **25.** The process control system set forth in claim 24 wherein:

2           the user-defined fields include a date-time field whose value represents a date and  
3   a time; and

4           the operation sets the date-time field to a date and time at which the activity is  
5   posted.

1   **26.** The process control system set forth in claim 24 wherein:

the user-defined fields include a person field whose value represents a person; and  
the operation sets the person field to a value which represents a person  
responsible for posting the activity.

**27.** The process control system set forth in claim 24 wherein:

the user-defined fields include a date-time field whose value represents a date and  
a time and a person field whose value represents a person; and  
the operation sets the date-time field to a date and time at which the activity is  
posted and the person field to a value which represents a person responsible for posting  
the activity.

**28.** The process control system set forth in claim 20 wherein:

at least one of the activity type records that specifies an operation defines an  
activity that the process control system automatically posts with regard to a process  
represented by a record returned by a query on the table of process records and  
at least another of the activity type records that specifies an operation defines an  
activity that is posted by a user of the process control system.

**29.** The process control system set forth in claim 20 wherein:

the specified operation is setting the particular user-defined field to a value.

**30.** The process control system set forth in claim 20 wherein:

2           the specified operation is computing a new value for the particular user-defined  
3   field from the user-defined field's present value.

1   **31.** The process control system set forth in claim 30 wherein:

2           the particular user-defined field's value belongs to an ordered set of values; and  
3           the specified operation is an increment operation wherein the particular user-  
4   defined field's new value is a value that follows the identified field's current value in the  
5   ordered set of values.

1   **32.** The process control system set forth in claim 20 wherein:

2           the particular user-defined field may have a null value or a non-null value; and  
3           what the specified operation does depends on whether the particular user-defined  
4   field has a null value.

1   **33.** The process control system set forth in claim 20 wherein:

2           the specified operation computes a new value for the particular user-defined field  
3   using a value from a reference field which is another field in the process record.

1   **34.** The process control system set forth in claim 33 wherein:

2           the particular user-defined field and the reference field have time-date values; and  
3           the specified operation computes a time-date value for the particular user-defined  
4   field using the time-date value of the reference field.



1   **35.** The process control system set forth in claim 34 wherein:

2           the reference field's value is always set to the current time-date.

1   **36.** The process control system set forth in claim 20 wherein:

2           the particular user-defined field has a person value; and

3           the reference field's values belong to an ordered set of person values wherein one  
4   of the person values is a last-used person value; and

5           the specified operation sets the user-defined field to the next person following the  
6   last-used person value in the ordered set.

1   **37.** An improved process control system including:

2           a server that has access to a database system and executes program code for the  
3   process control system;

4           a table of process records in the database system, a process record indicating a  
5   current condition of a process being controlled by the system and certain ones of the  
6   process records including one or more user-defined fields;

7           a table of activity type records in the database system that define activities to be  
8   performed with regard to the process; and

9           a table of activity records in the database system, an activity being posted as  
10   performed for the process by making a record for the activity in the table of activity  
11   records,

12   the improved process control system having the improvement comprising:

13 a specification in at least one activity type record of an operation that sets a  
14 particular user-defined field to a value corresponding to a value of a field in an activity  
15 record ; and

16 a first portion of the program code that is executed in conjunction with the posting  
17 of an activity of the type as performed for the process and does the operation with regard  
18 to the activity record made when the activity is posted,  
19 whereby the value of the field in the activity record made when the activity is posted is  
20 mapped onto the particular user-defined field.

1 **38.** The improved process control system set forth in claim 37 further comprising:

2 a second portion of the program code which performs first queries on user-defined  
3 fields in the table of process records and separate second queries on the table of activity  
4 records,  
5 whereby a query of the first queries may return the value of the field in the activity record  
6 that was mapped onto the particular user-defined field..

1 **39.** The improved process control system set forth in claim 37 wherein:

2 the activity record includes a date performed field that specifies when the activity  
3 is posted as performed; and

4 the operation sets the particular user-defined field to a value corresponding to the  
5 value of the date performed field.

1 **40.** The improved process control system set forth in claim 37 wherein:

the activity record includes a responsible person field that specifies the person who is responsible for performing the activity; and

the operation sets the particular user-defined field to a value corresponding to the value of the responsible person field.

**41.** The improved process control system set forth in claim 37 wherein:

the activity record includes a date performed field that specifies when the activity is posted as performed and a responsible person field that specifies the person who is responsible for performing the activity; and

the operation sets a first particular user-defined field using the date performed field to obtain a value specifying the date performed and a second particular user-defined field using the responsible person field to obtain a value that specifies the person who is responsible.

**42.** The improved process control system set forth in claim 37 wherein:

the particular user-defined field may have a null value; and

the specification of the operation specifies that the particular user-defined field be set only when the particular user-defined field has a null value.